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| EXAMINER |
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DATE MAILED:

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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

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Office Action Summary

Application No.
08/682,997

Applicant(s)
Ishikawa et al.

Examiner
Anand Rao

Group Art Unit
2713



- ☐ Responsive to communication(s) filed on _____
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle* 1035 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

- ☒ Claim(s) 1-28 is/are pending in the applicat
- Of the above, claim(s) _____ is/are withdrawn from consideration
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1-28 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claims _____ are subject to restriction or election requirement.

Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- ☒ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
- ☒ received.
- ☐ received in Application No. (Series Code/Serial Number) _____
- ☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

- ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- ☐ Notice of References Cited, PTO-892
- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____
- ☐ Interview Summary, PTO-413
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Notice of Informal Patent Application, PTO-152

— SEE OFFICE ACTION ON THE FOLLOWING PAGES —

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DETAILED ACTION

Continued Prosecution Application

1. The request filed on 6/06/00 as Paper 19 for a Continued Prosecution Application (CPA) under 37 CFR 1.53(d) based on parent Application No. 08/682,997 is acceptable and a CPA has been established. An action on the CPA follows.

Response to Arguments

2. Applicants arguments filed on 6/28/00 as in Paper 20 have been fully considered but they are not persuasive.

The Applicants present three arguments contending Examiner Tung's rejection of pending claims 1-28 as was applied through the combination Takizawa et al., (hereinafter referred to as "Takizawa") with Lightbody et al., (hereinafter referred to as "Lightbody") and with Sakoda et al., (hereinafter referred to as "Sakoda") as being unpatentable under 35 U.S.C. 103(a). However, a careful consideration of the arguments presented in light of the amended claims 1-28, the Examiner must respectfully disagree, and maintain the applicability of the abovementioned references as grounds for rejection in the Office Action that follows below.

Firstly, the Applicants argue that Takizawa fails to disclose "having its digital signal processing, which controls its image processing, changed by an external apparatus, including the control of the color space converting in accordance with the color space characteristic..." as in the claims (Paper 20: page 5, lines 23-26). The Examiner respectfully disagrees. In response to

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applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In particular, the limitation of the color converting step is a feature which is substantially met by the incorporation of the Lightbody reference, and thus its incorporation with Takizawa would meet the limitation.

Secondly, the Applicants argue that Lightbody fails to disclose the use of plural kinds of color space conversion means as in the claims (Paper 20: page 6, lines 1-2). The Examiner strongly disagrees. In particular, the Lightbody apparatus discloses the use of a color space converter that “*provides conversion from a variety of standard digital video input formats to a variety of RGB encoding outputs...*” which clearly establishes a plurality of color conversion means controllable by the settable registers (Lightbody: column 5, lines 15-27) as in a manner that reads upon the claims. Furthermore, it is noted that even if the apparatus disclosed in Lightbody only had one RGB encoding output format, it still would read on the “plurality of color converting means” term. In particular, it is noted that the “color space” itself could be defined by only two of the RGB values in a particular encoding output, yielding three different color spaces using only two of the three color coordinates: the space formed by R & G, the space formed by G & B, and the space formed by R & B. Converting to any one of these three two color spaces using even just one RGB encoding output format would also read upon the “plurality of color converting means...” as in the claims.

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Lastly, the Applicant's argue that the tertiary reference of Sakoda fails to disclose the use of a plurality color conversion means for conversion of a color space in an image pickup apparatus based upon the color space characteristic of an external apparatus (Paper 20: page 6, lines 2-17). The Examiner disagrees. As discussed above, the Examiner already maintains that the secondary reference discloses a plurality of color conversion means, and therefore, Sakoda doesn't need to show this feature. In a point of fact, it is noted that Sakoda was called upon to show that these means corresponded to look-tables alone. And in point of fact, since Sakoda discloses that while the mostly envisioned use within that reference is for an computer display, the color conversion doesn't not take place within the display as is incorrectly asserted by the Applicants (Paper 20: page 6, lines 10-11), but within the computer system disclosed in Sakoda (Sakoda: column 4, lines 40-65) which contains the of the color conversion means comprised look up tables (Sakoda: column 5, lines 14-20; column 11, lines 5-35). However, since this use of this computing system of Sakoda is based on a combination with the teaching the Lightbody reference, one notes that Lightbody teaches of having color conversion for other devices that are not display oriented. For instance, Lightbody which also discloses a "computer system" as in Sakoda, further has provided for the processing of images to/from video peripherals as accessible from the video I/O block (Lightbody: figure 2, element 35), and thus based upon the totality of the teachings relevant to "computer systems", the application Sakoda would not be restricted to color converting for solely the display monitor. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually

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where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Accordingly, for the reasons discussed above, the Examiner maintains the grounds of rejection in the Office Action that follows below.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 2-9, 11, 13-19, 23, and 27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claims 2-9 recite the limitation "...said look up table..." in various lines in the claims. There is insufficient antecedent basis for this limitation in the claim as all these claims depend from amended claim 1, which fails to establish a "look-up table" with the plurality of color converting means. Correction is required.

6. Claims 11, 13-19 recite the limitation "...said look up table..." in various lines in the claims. There is insufficient antecedent basis for this limitation in the claim as all these claims

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depend from amended claim 10, which fails to establish a “look-up table” with the plurality of color converting means. Correction is required.

7. Claim 23 recites the limitation “...said look up table...” in various lines in the claim. There is insufficient antecedent basis for this limitation in the claim as this claim depends from amended claim 20, which fails to establish a “look-up table” with the plurality of color converting means. Correction is required.

8. Claim 27 recites the limitation “...said display...” in lines 5-6 in the claim. There is insufficient antecedent basis for this limitation in the claim as this claim depends from amended claim 24, which fails to establish a “an image display means” anywhere in the body of the claim. Correction is required.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1, 10, 12, 20-22, 24-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takizawa et al., (hereinafter referred to as “Takizawa”) in view of Lightbody et al., (hereinafter referred to as “Lightbody”).

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Takizawa discloses an image pickup system comprising: an image pickup apparatus including an image sensor for photo-electrically converting a picked up object image into an electrical signal (Takizawa: column 4, lines 10-15); image signal generating means for generating part for forming an image signal from the electrical signal (Takizawa: column 4, lines 15-17); an interface part for externally transferring the image signal to an external signal processing apparatus (Takizawa: column 3, lines 60-64); an external signal processing apparatus connected to said interface means having a signal processing means for processing said image signal transferred through said interface (Takizawa: column 3, lines 64-65), and having a control part for controlling said image pick-up apparatus through said interface part (Takizawa: column 3, lines 51-62), wherein the control part controls the processing of the image signal such that bit numbers of the image signal are reduced (Takizawa: column 3, lines 9-12), as in claim 1. However, Takizawa fails to specifically disclose a color space converting part as a part of the image pickup system, wherein said color space converting part would also be controlled in accordance with the color space characteristic of said external processing apparatus, as in the claim. Lightbody discloses the use of a plurality of diverse color space converting means (Lightbody: column 5, lines 14-27: "variety of R,G,B, encoding output formats..."), wherein the color space converting apparatus would be controlled in accordance with the external processing apparatus (Lightbody: column 4, lines 15-25; column 5, lines 1-5) for use in an image processing apparatus for output to a plurality of external devices (Lightbody: column 5, lines 42-53) for video editing applications (Lightbody: column 6, lines 43-65). It would have been obvious for one of ordinary skill in the art

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to incorporate the use of the Lightbody plurality of color space converting means (Lightbody: column 5, lines 14-27), wherein the color space converting apparatus would be controlled in accordance with the external processing apparatus (Lightbody: column 4, lines 15-25; column 5, lines 1-5) for use in an image processing apparatus for output to a plurality of external devices (Lightbody: column 5, lines 42-53) as downloadable into the Takizawa program memory from the external interface (Takizawa: column 4, lines 52-63) in order to enable the Takizawa system to have the capability for video editing applications (Lightbody: column 6, lines 43-65). The Takizawa system, now incorporating the Lightbody plurality of color space converting means as discussed above, has all of the features of claim 1.

Takizawa discloses an image pickup apparatus comprising: an image pickup apparatus including an image sensor for photo-electrically converting a picked up object image into an electrical signal (Takizawa: column 4, lines 10-15); image signal generating means for generating a part for forming an image signal from the electrical signal (Takizawa: column 4, lines 15-17); an interface part for externally transferring the image signal to an external signal processing apparatus (Takizawa: column 3, lines 60-64); an external signal processing apparatus connected to said interface means having a signal processing means for processing said image signal transferred through said interface (Takizawa: column 3, lines 64-65), wherein the processing of the image signal is controlled such that bit numbers of the image signal are reduced (Takizawa: column 3, lines 9-12), as in claim 10. However, Takizawa fails to specifically disclose a diverse color space converting part as a part of the image pickup apparatus, wherein said color space

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converting part would also be controlled in accordance with the color space characteristic of said external processing apparatus, as in the claim. Lightbody discloses the use of a plurality of diverse color space converting means (Lightbody: column 5, lines 14-27: "variety of R,G,B, encoding output formats..."), wherein the color space converting apparatus would be controlled by the external processing apparatus (Lightbody: column 4, lines 15-25; column 5, lines 1-5) for use in an image processing apparatus for output to a plurality of external devices (Lightbody: column 5, lines 42-53) for video editing applications (Lightbody: column 6, lines 43-65). It would have been obvious for one of ordinary skill in the art to incorporate the use of the Lightbody plurality of diverse color space converting means (Lightbody: column 5, lines 14-27), wherein the color space converting apparatus would be controlled in accordance with the external processing apparatus (Lightbody: column 4, lines 15-25; column 5, lines 1-5) for use in an image processing apparatus for output to a plurality of external devices (Lightbody: column 5, lines 42-53) as downloadable into the Takizawa program memory from the external interface (Takizawa: column 4, lines 52-63) in order to enable the Takizawa apparatus to have the capability for video editing applications (Lightbody: column 6, lines 43-65). The Takizawa apparatus, now incorporating the Lightbody plurality of color space converting means as discussed above, has all of the features of claim 10.

Takizawa discloses an image pickup unit comprising: an image pickup means for picking up an optical image to form a picked-up image signal (Takizawa: column 4, lines 10-17); an interface means for performing communication with an external signal processing apparatus (Takizawa: column 3, lines 60-64); compression control means for having a compression data for

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controlling and reducing bit numbers of picked up signals (Takizawa: column 3, lines 9-12) transferred to said external signal processing apparatus according to a control signal supplied from said external signal processing apparatus to through said interface means (Takizawa: column 4, lines 33-55), as in claim 20. However, Takizawa fails to specifically disclose a diverse color space converting means as a part of the image pickup system, wherein said color space converting means would also be controlled in accordance with the color space characteristic of said external processing apparatus, as in the claim. Lightbody discloses the use of a plurality of color space converting means (Lightbody: column 5, lines 14-27: "variety of R,G,B, encoding output formats..."), wherein the color space converting apparatus would controlled in accordance with the external processing apparatus (Lightbody: column 4, lines 15-25; column 5, lines 1-5) for use in an image processing apparatus for output to a plurality of external devices (Lightbody: column 5, lines 42-53) for video editing applications (Lightbody: column 6, lines 43-65). It would have been obvious for one of ordinary skill in the art to incorporate the use of the Lightbody plurality of color space converting means (Lightbody: column 5, lines 14-27), wherein the color space converting apparatus would controlled in accordance with the external processing apparatus (Lightbody: column 4, lines 15-25; column 5, lines 1-5) for use in an image processing apparatus for output to a plurality of external devices (Lightbody: column 5, lines 42-53) as downloadable into the Takizawa program memory from the external interface (Takizawa: column 4, lines 52-63) in order to enable to Takizawa apparatus have the capability for video editing applications (Lightbody: column 6, lines 43-65). The Takizawa image pickup unit, now incorporating the

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Lightbody plurality of color space converting means as discussed above, has all of the features of claim 20.

Takizawa discloses a image picked-up image unit comprising: an interface means for performing communication (Takizawa: column 3, lines 60-65) with an image pickup unit including an image pickup means for picking up an optical image to form a picked-up image signal (Takizawa: column 4, lines 10-20); and transmission control means for transmitting to said image pickup unit through said interface means a control signal for controlling (Takizawa: column 4, lines 50-65) and reducing bit numbers (Takizawa: column 3, lines 9-12) of each color signal picked up image transferred through said interface means (Takizawa: column 3, lines 60-64), as in claim 24. However, Takizawa fails to specifically disclose a diverse color space converting means as a part of the image pickup system, wherein said color space converting means would also be controlled in accordance with the color space characteristic of said external processing apparatus, as in the claim. Lightbody discloses the use of a plurality of color space converting means (Lightbody: column 5, lines 14-27: "variety of R,G,B, encoding output formats..."), wherein the color space converting apparatus would controlled in accordance with the external processing apparatus (Lightbody: column 4, lines 15-25; column 5, lines 1-5) for use in an image processing apparatus for output to a plurality of external devices (Lightbody: column 5, lines 42-53) for video editing applications (Lightbody: column 6, lines 43-65). It would have been obvious for one of ordinary skill in the art to incorporate the use of the Lightbody plurality of color space converting means (Lightbody: column 5, lines 14-27), wherein the color space converting

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apparatus would controlled in accordance with the external processing apparatus (Lightbody: column 4, lines 15-25; column 5, lines 1-5) for use in an image processing apparatus for output to a plurality of external devices (Lightbody: column 5, lines 42-53) as downloadable into the Takizawa program memory from the external interface (Takizawa: column 4, lines 52-63) in order to enable to Takizawa apparatus have the capability for video editing applications (Lightbody: column 6, lines 43-65). The Takizawa image pickup unit, now incorporating the Lightbody plurality of color space converting means as discussed above, has all of the features of claim 24.

Takizawa discloses an image pickup system comprising: an image pickup apparatus including an image sensor for photo-electrically converting a picked up object image into an electrical signal (Takizawa: column 4, lines 10-15); image signal generating means for generating part for forming an image signal from the electrical signal (Takizawa: column 4, lines 15-17); an interface part for externally transferring the image signal to an external signal processing apparatus (Takizawa: column 3, lines 60-64); an external signal processing apparatus connected to said interface means having a signal processing means for processing said image signal transferred through said interface (Takizawa: column 3, lines 64-65), and having a control part for controlling said image pick-up apparatus through said interface part (Takizawa: column 3, lines 51-62), wherein the control part controls the processing of the image signal such that bit numbers of the image signal are reduced (Takizawa: column 3, lines 9-12), as in claim 28. However, Takizawa fails to specifically disclose a color space converting part as a part of the image pickup system, wherein said color space converting part would also be controlled in accordance with the

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color space characteristic of said external processing apparatus, and a display control part for controlling said image pickup apparatus and said display device, as in the claim. Lightbody discloses the use of a plurality of diverse color space converting means (Lightbody: column 5, lines 14-27: "variety of R,G,B, encoding output formats..."), wherein the color space converting apparatus would be controlled in accordance with the external processing apparatus (Lightbody: column 4, lines 15-25; column 5, lines 1-5), and a display control part for controlling said image pickup apparatus and said display device (Lightbody: column 4, lines 23-60) for use in an image processing apparatus for output to a plurality of external devices (Lightbody: column 5, lines 42-53) for video editing applications (Lightbody: column 6, lines 43-65). It would have been obvious for one of ordinary skill in the art to incorporate the use of the Lightbody plurality of color space converting means (Lightbody: column 5, lines 14-27), wherein the color space converting apparatus would be controlled in accordance with the external processing apparatus (Lightbody: column 4, lines 15-25; column 5, lines 1-5) for use in an image processing apparatus for output to a plurality of external devices (Lightbody: column 5, lines 42-53) as downloadable into the Takizawa program memory from the external interface (Takizawa: column 4, lines 52-63) in order to enable the Takizawa system to have the capability for video editing applications (Lightbody: column 6, lines 43-65). The Takizawa apparatus, now incorporating the Lightbody plurality of color space converting means and the display control part as discussed above, has all of the features of claim 28.

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Regarding claim 12, the Takizawa apparatus, now incorporating the Lightbody plurality of color space converting means as discussed above, has the controlling means for controlling the transfer of the video image through said interface being provided external to the body of the image pickup unit (Takizawa: column 4, lines 33-62), as in the claim.

Regarding claim 21, the Takizawa image pickup unit, now incorporating the Lightbody plurality of color space converting means as discussed above, has the image pickup unit arranged to be removably attachable to said external signal processing apparatus (Takizawa: figure 1).

Regarding claim 22, the Takizawa image pickup unit, now incorporating the Lightbody plurality of color space converting means as discussed above, has the compression control means arranged to change the compression characteristics (Takizawa: column 3, lines 9-12) by converting a color space of the picked up image (Lightbody: column 5, lines 30-45), as in the claim.

Regarding claim 25, the Takizawa image pickup unit, now incorporating the Lightbody plurality of color space converting means as discussed above, has the image pickup unit arranged to be removably attachable to said external signal processing apparatus (Takizawa: figure 1).

Regarding claim 26, the Takizawa image pickup unit, now incorporating the Lightbody plurality of color space converting means as discussed above, has the compression control means arranged to change the compression characteristics (Takizawa: column 3, lines 9-12) by converting a color space of the picked up image (Lightbody: column 5, lines 30-45), as in the claim.

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Regarding claim 27, the Takizawa image pickup unit, now incorporating the Lightbody plurality of color space converting means as discussed above, has transmission control means (Takizawa: column 4, lines 40-60) arranged to change the compression characteristics of said image pickup means (Takizawa: column 3, lines 9-12) through said interface means according to a capability of said image display means (Lightbody: column 4, lines 30-60), as in the claim.

11. Claims 2-9, 11, 13-19 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takizawa et al., (hereinafter referred to as "Takizawa") in view of Lightbody et al., (hereinafter referred to as "Lightbody") as applied to claims 1, 10, and 20 above, and further in view of Sakoda et al., (hereinafter referred to as "Sakoda").

The Takizawa system, now incorporating the Lightbody plurality of color space converting means as discussed above, has a majority of the features of claim 2 including color space converting means for converting a plurality of kinds of color information corresponding to picture elements (Lightbody: column 5, lines 13-27), as discussed above concerning parent claim 1. However, the Takizawa system, incorporating the use of the Lightbody plurality of color space converting means, fails to disclose the explicit use of look up tables as in the claim. Sakoda discloses that for color space conversion it is advantageous and well-known to use the plural look up tables (Sakoda: column 10, lines 53-68; column 11, lines 1-35) for efficient image processing of multi-format bits (Sakoda: column 2, lines 16-36). Accordingly, given the advantageous teaching of Sakoda, it would have been obvious for one of ordinary skill in the art to incorporate the use of the Sakoda's plurality of LUTs (look up tables) into the color conversion means of the

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Takizawa-Lightbody system in order to efficiently process multi-format pixels. The Takizawa system, now incorporating the Lightbody plurality of color space converting means as discussed above and the use of the Sakoda's plurality of LUTs (look up tables), has all of the features of claim 2.

The Takizawa system, now incorporating the Lightbody plurality of color space converting means as discussed above, has a majority of the features of claim 3 including control means (Takizawa: column 4, lines 50-60) and color space converting means (Lightbody: column 5, lines 13-27), as discussed above concerning parent claim 1. However, the Takizawa system, incorporating the use of the Lightbody plurality of color space converting means, fails to disclose the explicit use of look up tables as in the claim. Sakoda discloses that for color space conversion it is advantageous and well-known to use the plural look up tables (Sakoda: column 10, lines 53-68; column 11, lines 1-35) for efficient image processing of multi-format bits (Sakoda: column 2, lines 16-36). Accordingly, given the advantageous teaching of Sakoda, it would have been obvious for one of ordinary skill in the art to incorporate the use of the Sakoda's plurality of LUTs (look up tables) into the color conversion means of the Takizawa-Lightbody system in order to efficiently process multi-format pixels. The Takizawa system, now incorporating the Lightbody plurality of color space converting means as discussed above and the use of the Sakoda's plurality of LUTs (look up tables), has all of the features of claim 3.

The Takizawa system, now incorporating the Lightbody plurality of color space converting means as discussed above, has a majority of the features of claim 4 including control

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means for arbitrarily selecting a color conversion format (Lightbody: column 5, lines 15-20), as discussed above concerning parent claim 1. However, the Takizawa system, incorporating the use of the Lightbody plurality of color space converting means, fails to disclose the explicit use of look up tables as in the claim. Sakoda discloses that for color space conversion it is advantageous and well-known to use the plural look up tables (Sakoda: column 10, lines 53-68; column 11, lines 1-35) for efficient image processing of multi-format bits (Sakoda: column 2, lines 16-36). Accordingly, given the advantageous teaching of Sakoda, it would have been obvious for one of ordinary skill in the art to incorporate the use of the Sakoda's plurality of LUTs (look up tables) into the color conversion means of the Takizawa-Lightbody system in order to efficiently process multi-format pixels. The Takizawa system, now incorporating the Lightbody plurality of color space converting means as discussed above and the use of the Sakoda's plurality of LUTs (look up tables), has all of the features of claim 4.

The Takizawa system, now incorporating the Lightbody plurality of color space converting means as discussed above, has a majority of the features of claims 5-6 including storing color conversion data in a ROM (Takizawa: column 3, lines 38-40), as discussed above concerning parent claim 1. However, the Takizawa system, incorporating the use of the Lightbody plurality of color space converting means, fails to disclose the explicit use of look up tables as being contained in a ROM as in the claims. Sakoda discloses that for color space conversion it is advantageous and well-known to use the plural look up tables (Sakoda: column 10, lines 53-68; column 11, lines 1-35) for efficient image processing of multi-format bits

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(Sakoda: column 2, lines 16-36). Accordingly, given the advantageous teaching of Sakoda, it would have been obvious for one of ordinary skill in the art to incorporate the use of the Sakoda's plurality of LUTs (look up tables) into the color conversion means of the Takizawa-Lightbody system in order to efficiently process multi-format pixels. The Takizawa system, now incorporating the Lightbody plurality of color space converting means as discussed above and the use of the Sakoda's plurality of LUTs (look up tables), has all of the features of claims 5-6.

The Takizawa system, now incorporating the Lightbody plurality of color space converting means as discussed above, has a majority of the features of claims 7-8, including having a reloadable memory in communication with the control means (Takizawa: column 4, lines 45-50), as discussed above concerning parent claim 1. However, the Takizawa system, incorporating the use of the Lightbody plurality of color space converting means, fails to disclose the explicit use of look up tables as in the claim. Sakoda discloses that for color space conversion it is advantageous and well-known to use the plural look up tables (Sakoda: column 10, lines 53-68; column 11, lines 1-35) for efficient image processing of multi-format bits (Sakoda: column 2, lines 16-36). Accordingly, given the advantageous teaching of Sakoda, it would have been obvious for one of ordinary skill in the art to incorporate the use of the Sakoda's plurality of LUTs (look up tables) into the color conversion means of the Takizawa-Lightbody system in order to efficiently process multi-format pixels. The Takizawa system, now incorporating the Lightbody plurality of color space converting means as discussed above and the use of the Sakoda's plurality of LUTs (look up tables), has all of the features of claims 7-8.

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The Takizawa system, now incorporating the Lightbody plurality of color space converting means as discussed above, has a majority of the features of claim 9, as discussed above concerning parent claim 1. However, the Takizawa system, incorporating the use of the Lightbody plurality of color space converting means, fails to disclose the explicit use of look up tables as being held in the form of a logic circuit as in the claim. Sakoda discloses that for color space conversion it is advantageous and well-known to use the plural look up tables as being held in the form of logic circuits (Sakoda: column 10, lines 53-68; column 11, lines 1-35) for efficient image processing of multi-format bits (Sakoda: column 2, lines 16-36). Accordingly, given the advantageous teaching of Sakoda, it would have been obvious for one of ordinary skill in the art to incorporate the use of the Sakoda's plurality of LUTs (look up tables) into the color conversion means of the Takizawa-Lightbody system in order to efficiently process multi-format pixels. The Takizawa system, now incorporating the Lightbody plurality of color space converting means as discussed above and the use of the Sakoda's plurality of LUTs (look up tables), has all of the features of claim 9.

The Takizawa apparatus, now incorporating the Lightbody plurality of color space converting means as discussed above, has a majority of the features of claim 11 including color space converting means for converting a plurality of kinds of color information corresponding to picture elements (Lightbody: column 5, lines 13-27), as discussed above concerning parent claim 10. However, the Takizawa apparatus, incorporating the use of the Lightbody plurality of color space converting means, fails to disclose the explicit use of look up tables as in the claim. Sakoda

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discloses that for color space conversion it is advantageous and well-known to use the plural look up tables (Sakoda: column 10, lines 53-68; column 11, lines 1-35) for efficient image processing of multi-format bits (Sakoda: column 2, lines 16-36). Accordingly, given the advantageous teaching of Sakoda, it would have been obvious for one of ordinary skill in the art to incorporate the use of the Sakoda's plurality of LUTs (look up tables) into the color conversion means of the Takizawa-Lightbody apparatus in order to efficiently process multi-format pixels. The Takizawa apparatus, now incorporating the Lightbody plurality of color space converting means as discussed above and the use of the Sakoda's plurality of LUTs (look up tables), has all of the features of claim 11.

The Takizawa apparatus, now incorporating the Lightbody plurality of color space converting means as discussed above, has a majority of the features of claim 13 including control means (Takizawa: column 4, lines 50-60) and color space converting means (Lightbody: column 5, lines 13-27), as discussed above concerning parent claim 10. However, the Takizawa apparatus, incorporating the use of the Lightbody plurality of color space converting means, fails to disclose the explicit use of look up tables as in the claim. Sakoda discloses that for color space conversion it is advantageous and well-known to use the plural look up tables (Sakoda: column 10, lines 53-68; column 11, lines 1-35) for efficient image processing of multi-format bits (Sakoda: column 2, lines 16-36). Accordingly, given the advantageous teaching of Sakoda, it would have been obvious for one of ordinary skill in the art to incorporate the use of the Sakoda's plurality of LUTs (look up tables) into the color conversion means of the Takizawa-Lightbody

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apparatus in order to efficiently process multi-format pixels. The Takizawa apparatus, now incorporating the Lightbody plurality of color space converting means as discussed above and the use of the Sakoda's plurality of LUTs (look up tables), has all of the features of claim 13.

The Takizawa apparatus, now incorporating the Lightbody plurality of color space converting means as discussed above, has a majority of the features of claim 14 including control means for arbitrarily selecting a color conversion format (Lightbody: column 5, lines 15-20), as discussed above concerning parent claim 10. However, the Takizawa apparatus, incorporating the use of the Lightbody plurality of color space converting means, fails to disclose the explicit use of look up tables as in the claim. Sakoda discloses that for color space conversion it is advantageous and well-known to use the plural look up tables (Sakoda: column 10, lines 53-68; column 11, lines 1-35) for efficient image processing of multi-format bits (Sakoda: column 2, lines 16-36). Accordingly, given the advantageous teaching of Sakoda, it would have been obvious for one of ordinary skill in the art to incorporate the use of the Sakoda's plurality of LUTs (look up tables) into the color conversion means of the Takizawa-Lightbody apparatus in order to efficiently process multi-format pixels. The Takizawa apparatus, now incorporating the Lightbody plurality of color space converting means as discussed above and the use of the Sakoda's plurality of LUTs (look up tables), has all of the features of claim 14.

The Takizawa apparatus, now incorporating the Lightbody plurality of color space converting means as discussed above, has a majority of the features of claims 15-16 including storing color conversion data in a ROM (Takizawa: column 3, lines 38-40), as discussed above

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concerning parent claim 10. However, the Takizawa apparatus, incorporating the use of the Lightbody plurality of color space converting means, fails to disclose the explicit use of look up tables as being contained in a ROM as in the claims. Sakoda discloses that for color space conversion it is advantageous and well-known to use the plural look up tables (Sakoda: column 10, lines 53-68; column 11, lines 1-35) for efficient image processing of multi-format bits (Sakoda: column 2, lines 16-36). Accordingly, given the advantageous teaching of Sakoda, it would have been obvious for one of ordinary skill in the art to incorporate the use of the Sakoda's plurality of LUTs (look up tables) into the color conversion means of the Takizawa-Lightbody apparatus in order to efficiently process multi-format pixels. The Takizawa apparatus, now incorporating the Lightbody plurality of color space converting means as discussed above and the use of the Sakoda's plurality of LUTs (look up tables), has all of the features of claims 15-16.

The Takizawa apparatus, now incorporating the Lightbody plurality of color space converting means as discussed above, has a majority of the features of claims 17-18, including having a reloadable memory in communication with the control means (Takizawa: column 4, lines 45-50), as discussed above concerning parent claim 10. However, the Takizawa apparatus, incorporating the use of the Lightbody plurality of color space converting means, fails to disclose the explicit use of look up tables as in the claim. Sakoda discloses that for color space conversion it is advantageous and well-known to use the plural look up tables (Sakoda: column 10, lines 53-68; column 11, lines 1-35) for efficient image processing of multi-format bits (Sakoda: column 2, lines 16-36). Accordingly, given the advantageous teaching of Sakoda, it would have been

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obvious for one of ordinary skill in the art to incorporate the use of the Sakoda's plurality of LUTs (look up tables) into the color conversion means of the Takizawa-Lightbody apparatus in order to efficiently process multi-format pixels. The Takizawa apparatus, now incorporating the Lightbody plurality of color space converting means as discussed above and the use of the Sakoda's plurality of LUTs (look up tables), has all of the features of claims 17-18.

The Takizawa apparatus, now incorporating the Lightbody plurality of color space converting means as discussed above, has a majority of the features of claim 19, as discussed above concerning parent claim 10. However, the Takizawa apparatus, incorporating the use of the Lightbody plurality of color space converting means, fails to disclose the explicit use of look up tables as being held in the form of a logic circuit as in the claim. Sakoda discloses that for color space conversion it is advantageous and well-known to use the plural look up tables as being held in the form of logic circuits (Sakoda: column 10, lines 53-68; column 11, lines 1-35) for efficient image processing of multi-format bits (Sakoda: column 2, lines 16-36). Accordingly, given the advantageous teaching of Sakoda, it would have been obvious for one of ordinary skill in the art to incorporate the use of the Sakoda's plurality of LUTs (look up tables) into the color conversion means of the Takizawa-Lightbody apparatus in order to efficiently process multi-format pixels. The Takizawa apparatus, now incorporating the Lightbody plurality of color space converting means as discussed above and the use of the Sakoda's plurality of LUTs (look up tables), has all of the features of claim 19.

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The Takizawa image pickup unit, now incorporating the Lightbody plurality of color space converting means as discussed above, has a majority of the features of claim 23, including compression means (Takizawa: column 3, lines 9-12), as discussed above concerning parent claim 20. However, the Takizawa apparatus, incorporating the use of the Lightbody plurality of color space converting means, fails to disclose the explicit use of look up tables as being held in the form of a logic circuit as in the claim. Sakoda discloses that for color space conversion it is advantageous and well-known to use the plural look up tables as being held in the form of logic circuits (Sakoda: column 10, lines 53-68; column 11, lines 1-35) for efficient image processing of multi-format bits (Sakoda: column 2, lines 16-36). Accordingly, given the advantageous teaching of Sakoda, it would have been obvious for one of ordinary skill in the art to incorporate the use of the Sakoda's plurality of LUTs (look up tables) into the color conversion means of the Takizawa-Lightbody apparatus in order to efficiently process multi-format pixels. The Takizawa image pickup unit, now incorporating the Lightbody plurality of color space converting means as discussed above and the use of the Sakoda's plurality of LUTs (look up tables), has all of the features of claim 23.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anand S. Rao whose telephone number is (703)-305-4813.

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asr

August 21, 2000

ANDY RAO
PRIMARY EXAMINER

